

## **REMARKS**

Applicant wishes to thank the Examiner for the detailed remarks.

Claims 1-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Reznik* (5,951,839) in view of *Spadaccini* (6,315,815) and *Isley* (3,933,638). Applicant respectfully traverses these rejections as there is absolutely no teaching, suggestion, or motivation to modify *Reznik* in view of *Spadaccini* and *Isley* as proposed.

Initially, the Examiner admits that *Reznik* does not disclose the mechanism by which the fuel redox potential is reduced, i.e., the combination of hydrogen with oxygen to form water. The Examiner further admits that *Reznik* fails to teach the removal of water from the fuel.

In the 9-24-2007 Office Action the Examiner refers to Example XIV of *Reznik* (reproduced below):

### **EXAMPLE XIV**

#### **Enhancement of Hydrocarbon Fuel**

Hydrogen was sparged into regular unleaded gasoline. The redox potential of the gasoline was reduced from about 300 mv to -150 mv. This gasoline was employed in a lawnmower and an automobile and appeared to provide easier starting and more powerful operation.

The title of *Reznik* is METHOD OF PRODUCING A WATER-BASED FLUID HAVING MAGNETIC RESONANCE OF A SELECTED MATERIAL. Example XIV discloses only to sparge [spray or sprinkle] hydrogen into regular unleaded gasoline in the manner of the other examples which similarly spray water-based fluid with active hydrogen onto plants. The Examiner also states that the lowering of the redox potential is by the formation of water (see col. 2, lines 65-67):

The present invention seeks to quench the hydroxyl free radicals by atomic hydrogen, to form water. The atomic hydrogen activity is provided via reducing water.

This citation, however, is from a completely different section of *Reznik* and has nothing whatsoever to do with Examiner XIV.

The present invention also seeks to provide apparatus and methods for reducing the redox potential of substances and various uses of such substances.

It is appreciated that drinking water, especially chlorinated water, has a high concentration of oxidizing OH radicals expressed in high redox potential readings.

The present invention seeks to quench the hydroxyl free radicals by atomic hydrogen, to form water. The atomic hydrogen activity is provided via reducing water.

Example XIV makes no mention of water as the water was utilized to produce the hydrogen which was then sprayed into the gasoline. *Reznik* requires that hydrogen be supplied:

By causing a fluid, such as a gas, e.g. air, or a liquid, e.g. water or a hydrocarbon fuel, to flow past tube 10, atomic hydrogen is supplied to the fluid, thus reducing the redox potential thereof, i.e. increasing the hydrogen activity of the fluid. Typical reductions of redox potential may be from about +300 mv to -150 mv for water, gasoline and air.

This is a more proper interpretation of the *Reznik* reference which provides a water-based fluid with active hydrogen having selected characteristics. That is, although one of the many disparate references examples disclosed by *Reznik* sprays or sprinkles hydrogen into regular unleaded gasoline, the hydrogen was originally reduced from a water-based fluid with active hydrogen, thus reinforcing Applicant's previous argument that there is no motivation to combine either of *Spadaccini* or *Isley* with *Reznik*. Again, it appears that the only motivation to make the combination as proposed is by following the knowledge disclosed within Applicant's present invention. This is impermissible usage of hindsight in an attempt to recreate Applicant's device. Applicant respectfully requests reconsideration of the rejection.

Even if the combination were properly made – which it is not – there are differences between the claimed invention and the teachings of the cited references so that the combination does not meet the limitation of Applicant's claims. Applicant separates water from a liquid hydrocarbon fuel through an electrochemical conversion system. *Reznik* does not extract water but reduces a water-based fluid. The proposed combination fails to disclose or suggest such subject matter.

It is believed that this application is in condition for allowance. If any fees or extensions of time are required, please charge to Deposit Account No. 21-0279 in the name of United Technologies Corporation.

Respectfully Submitted,

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